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27 OCT 03 E847260/2 D02624
P01/7700 0.00-0324908.3**Request for grant of a patent**

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NP10 8QQ

1. Your reference

6.70.1061 UK - Case 25

2. Patent application number

(The Patent Office will fill in this part)

0324908.3

3. Full name, address and postcode of the or of each applicant (underline all surnames)

 INTERBREW S.A.
VARSTRAAT 94
B-3000 LEUVEN
BELGIUM

Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

A BELGIAN CORPORATION

08518714001

4. Title of the invention

METHOD OF INSTALLING ALCOHOL BEVERAGE BAG INTO A CONTAINER

5. Name of your agent (if you have one)

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

 G.F. REDFERN & CO.
LYNN HOUSE
IVY ARCH ROAD
WORTHING
WEST SUSSEX. BN14 8BX

Patents ADP number (if you know it)

1412002 08435356001

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number

(if you know it)

Date of filing

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7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing
(day / month / year)

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:

YES

- a) any applicant named in part 3 is not an inventor, or
- b) there is an inventor who is not named as an applicant, or
- c) any named applicant is a corporate body.

See note (d)

Patents Form 1/77

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Continuation sheets of this form	7
Description	
Claim(s)	2
Abstract	1
Drawing(s)	4

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10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination
(Patents Form 10/77)

Any other documents
(please specify)

11.

I/We request the grant of a patent on the basis of this application.

Signature

24 October 2003

12. Name and daytime telephone number of person to contact in the United Kingdom

Mrs. S.M. Camp
01903 820466

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METHOD OF INSTALLING ALCOHOL BEVERAGE BAG INTO A CONTAINER

Field of the Invention

The present invention relates to a method of installing an alcohol beverage bag into a container.

Background of the Invention

It is known to construct an alcohol bag in a manner that when the bag is filled with an alcohol beverage, such as, for example, beer or wine, the bag resembles the shape of the container in which the bag is housed.

In applications where the bag is used to contain beer, the bags are typically housed in a keg having a generally cylindrical shape. The bag has a neck portion secured to the keg. The bag is deflated, past through a keg aperture and then filled with beer. After the beer is dispensed from the keg, the bag is removed through the aperture. Typically, the bag comprises two circular panels spaced apart by a cylindrical shaped sheet. The sheet is welded at its ends to the circular panels to form two end seams. The sheet is also welded along its length to form a third seam. A fourth seam is made where the neck passes through one of the circular panels.

Alternatively the bag may comprise a first panel and a second panel having peripheral edges welded together to form a first seam. Each of the first and second panels has an area larger than a cross-sectional area for the keg. This sizing of the panels relative to the keg cross-sectional area permits the panels to be forced apart during bag filling so as to expand the bag internal space to approximate the volume of the keg. The bag has an open neck member passing through an aperture of the first panel and welded thereto to form a second seam.

A problem occurs during bag insertion into the keg. Typically, the keg has an aperture for receiving the bag where the size of the aperture corresponds to the size of the bag neck and the size of the aperture is much smaller than the bulk of the bag. This makes it difficult to insert the bag into the keg. Further care must be taken not to rupture the bag during its installation in the keg.

Summary of the Invention

It is desired to provide a method for installing a bag in a container that is easier to implement.

The present invention relates to a method of installing a bag into a container to be ready for receiving an alcohol beverage. The container has an aperture for receiving the bag where the aperture of the container has a cross-sectional area smaller than the bulk of the bag. The method comprises the steps of folding the bag into overlapping panels having a bag cross-sectional area able to pass through the aperture cross-sectional area. The method includes inserting this folded bag through the aperture and into the container.

By folding the bag, it is possible to collapse the bulk of the bag in a structured manner whereby the cross-sectional volume of the bag

becomes less than or of a size that is able to pass through the cross-sectional aperture of the container without adversely effecting the integrity of the bag wall.

It is contemplated that the method of the present invention may further include the step of removing air from the bag so as to flatten the bag prior to the bag being folded.

The method of installing the bag may further include the steps of sealing the bag to the neck aperture of the container after the bag has been inserted into the container and drawing a vacuum from the container to cause the bag to unfold within the container and be drawn towards the walls of the container. While the bag may unfold by itself after it passes through the aperture or may unfold during the step of inflating the bag, it should be understood that by drawing a vacuum, the bag is positively pulled out of its folded condition towards the inside walls of the container.

Brief Description of The Drawings

For a better understanding of the nature and objects of the present invention reference may be had to the accompanying diagrammatic drawings in which:

Figure 1 is a perspective view of the bag of the present invention shown in a flattened condition;

Figure 2 is a perspective view of the bag of the present invention shown inserted and deflated in a keg;

Figure 3 is a view of a cylindrical shaped bag suitable for insertion into a keg; and

Figures 4 through 9 illustrate various steps in the method of the

present invention.

Detailed Description Of The Invention

Referring to Figure 1 there is shown a bag 10 having a preferred construction for use in a container 12. The bag 10 is suitable for use for housing an alcohol beverage and in the preferred embodiment for housing beer. The bag 10 is pliable and preferably comprises two layers of plastic material 14 and 16 which are welded together along their peripheral edges 20 and 22 respectively to provide a peripheral edge seam 18. The panels 14 and 16 are generally rectangular in shape and in the preferred embodiment are square. It should be understood that each panel may comprise one or more layers of plastic material joined along the peripheral edges and that these layers are not necessarily laminated together.

The first panel 14 has an aperture 24 positioned in the first panel offset from its center at 26. A neck 30 extends through the first panel 14 at aperture 24 and is secured to the aperture 24 by a weld 32. The neck 30 typically comprises a rubber like material and has an opening or passageway 34 through which alcohol or beer is filled into the space or volume between the panels 14 and 16.

The bag 10 is shown in Figure 1 to be considerably oversized relative to the size of the keg 12. The keg 12 has top and bottom circular walls 40 and 42 with a cylindrical side wall 44. The bag 10 has a cross sectional area that is considerably larger than the cross sectional area of the keg 12. That is the periphery of panels 14 and 16 have an area which is considerably larger than the area of the top or bottom and wall portions 40 and 42 of the keg 12. In an alternative embodiment where the inflated

bag has a cylindrical shape, the size of the inflated bag may correspond to the size of the keg 12.

Referring to Figure 2, there is shown a view of the keg 12 having the bag 10 inserted into the keg 12 through an upper aperture 46 in the top end wall portion 40 of the keg 12. The bag 10 is adapted to have its neck 30 to be secured with aperture 46 of corresponding size and shape. The panels 14 and 16 are pulled through the aperture 46 into the internal volume of the cylinder or keg 12 in accordance with the method of the invention to be described hereinafter. It should be understood that in Figure 2, the bag 10 is not inflated or filled with any alcohol. When the bag 10 is filled, either with CO₂ or the beverage, the bag 10 unfolds and expands such that portions of panels 14 and 16 come into contact with cylindrical walls 44 and the end walls 40 and 42 of the keg 12. The unfolding is illustrated by arrows 21.

Referring to Figure 3 there is shown an alternative embodiment for a cylindrical bag 80 which may be used with the cylinder 12 shown in Figure 1. The cylindrical bag 80 has a top panel 60, a bottom panel 62 and a side panel 63. The side panel 63 is wrapped in a cylindrical fashion and is joined along seam 64. The top panel 60 is joined to the side panel 63 by seam 66 and the bottom panel 62 is joined to the side panel 63 by seam 68. These seams are formed by welding. A neck portion 70 which is rubber-like in material will also extend through the upper end portion or wall panel 60 of the cylinder of the bag 80 and is secured to the upper panel 60 by a separate weld 72. While this bag is provided with three seams on the bag plus an additional seam for the neck, the stresses placed on the seams by the bag 80 will be considerably less due to the fact that the neck 70 is positioned off center from the center 74 of the top portion

or panel 60 of the bag 80.

In accordance with the present invention it should be understood that the neck 30 of the bag 10 of Figure 1 typically has a cross-sectional area or a diameter in this preferred embodiment that corresponds to the diameter 46 of the container 12. In some embodiments, securing rings or intermediate rings (not shown) may surround the neck 30 so as to seal or positively locate the neck 30 against the aperture 46. As illustrated in Figure 1, the cross-sectional area of the bag below the neck 30 is sufficiently larger than the cross-sectional area or diameter of aperture 46 of container 12. It should also be understood that the Figures utilized herein are for the purposes of illustration and that the exact dimensions of the cross-sectional areas of the neck 30 of bag 10 and aperture 46 of container 12 are not to scale.

In order to effectively insert and install the bag 10 within the container 12, the method of the present invention comprises the first step shown in Figure 4 of orientating the bag 10 to one side of, or as in this instance below the neck 30. The bag 10 is then deflated by removing any air or contents out through the neck by collapsing the bag against itself. Next, the bag is folded as indicated by arrows 92 about fold line 94. This results in the partially folded bag 10 configuration shown in Figure 5. Next the bag 10 is folded at folds 96 behind the bag as indicated by arrows 98 to result in the folded bag 10 shown in Figure 6. In Figure 6, the bag 10 has a folded cross-sectional area which substantially corresponds to the cross-sectional area of neck 30.

In the next step, as shown in Figure 7 the bag 10 is moved in the direction of arrow 100 into the container 12 through aperture 46.

The next step is to seal the neck 30 to the aperture 46 and at this

time that the bag may start to unfold on its own as represented by arrows 21 shown in Figure 8. In order to assist the bag in unfolding and moving towards the inner walls of the keg 12, a vacuum source 102 is applied through a valve 104 of the container 12. It should be understood that the valve 104 in an alternative embodiment may pass through a ring type valve assembly which forms part of the sealing mechanism of the neck 30 to the aperture 46 of the keg 12. In the next step a vacuum is applied as indicated by arrow 106 through a vacuum device or pump 102 from valve 104. This evacuates the container 12 causing the walls of the bag 10 to be drawn towards the inner walls of the keg 12.

It should be understood that once the bag 10 is inserted in the keg 12, it may be inflated by an initial purging of the bag 10 with CO₂ or may be inflated by filling the bag 10 with a beverage. This inflation of the bag 10 results in the bag 10 unfolding.

It should be understood that the method of folding the bag 10 described herein is merely an example of one manner in which the bag of Figure 1 may be folded for one particular embodiment or construction of a bag and that other folding patterns will be readily apparent to a person skilled in the art for the bags of Figures 1 and 3 and other bag shapes in view of the teachings contained herein.

WHAT IS CLAIMED IS:

1. A method of installing a bag into a container to be ready for receiving an alcohol beverage where the container has an aperture for receiving the bag that has an aperture cross-sectional area smaller than the bulk of the bag, the method comprising the steps of:

folding the bag into overlapping panels having a bag cross-sectional area able to pass through the aperture cross sectional area; and,
inserting the folded bag through the aperture into the container.

2. The method of installing a bag of claim 1 further including the step of:

removing air from the bag and flattening the bag prior to the step of folding the bag.

3. The method of installing the bag of claim 1 further comprising the steps of:

sealing the bag to the neck aperture of the container after the step of inserting the bag into the container, and

drawing a vacuum from the container to cause the bag to unfold within the container and be drawn towards walls of the container.

4. A method of installing a bag into a container to be ready for receiving an alcohol beverage where the container has an aperture for receiving the bag that has an aperture cross-sectional area smaller than the bulk of the bag and the bag has a neck of corresponding cross-sectional area as the aperture, the method comprising the steps of:

orientating the bag to one side of the neck;
folding the bag into overlapping panels having a collapsible bag cross-sectional area less than the aperture cross sectional area; and,
inserting the folded bag through the aperture into the container.

5. The method of installing a bag of claim 4 further including the step of:

removing air from the bag and flattening the bag prior to the step of folding the bag.

6. The method of installing the bag of claim 4 further comprising the steps of:

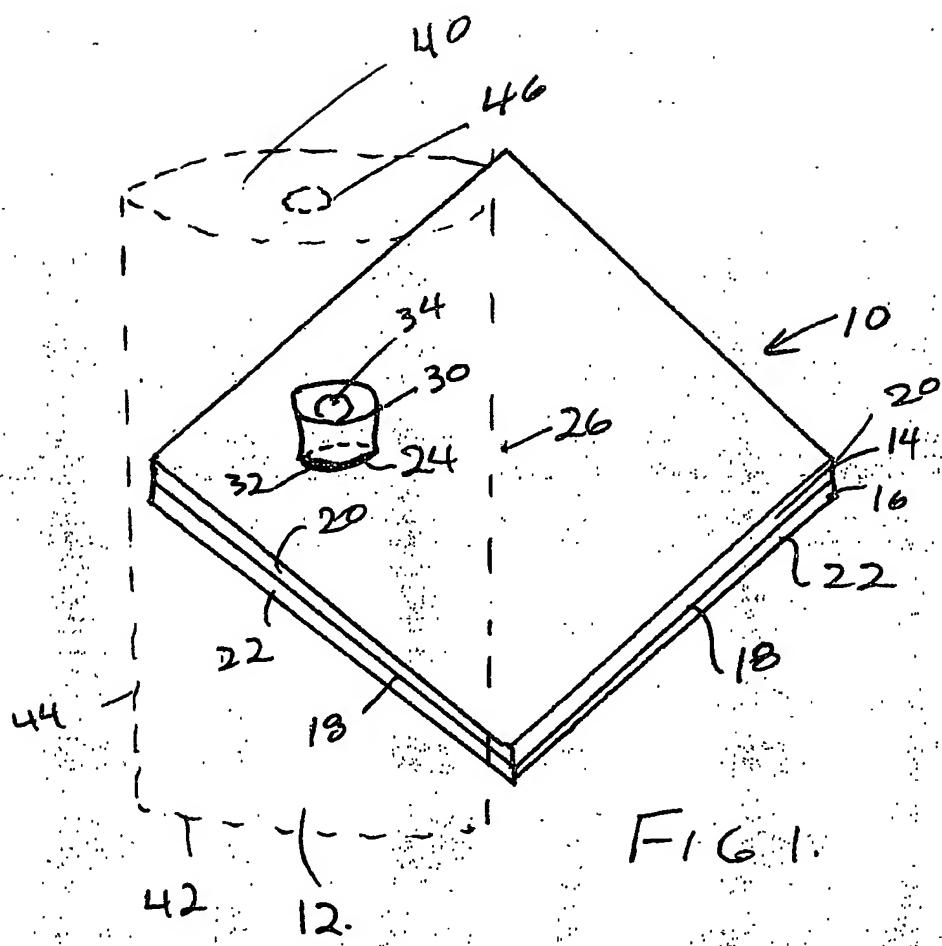
sealing the bag to the neck aperture of the container after the step of inserting the bag into the container, and

drawing a vacuum from the container to cause the bag to unfold within the container and be drawn towards walls of the container.

METHOD OF INSTALLING ALCOHOL
BEVERAGE BAG INTO A CONTAINER

ABSTRACT

The method of installing an alcohol beverage bag into a container through an aperture in the container has the steps of folding the bag into overlapping panels so as to have a cross-sectional area able to pass through the aperture of the container and then inserting the folded bag through the aperture and into the container.



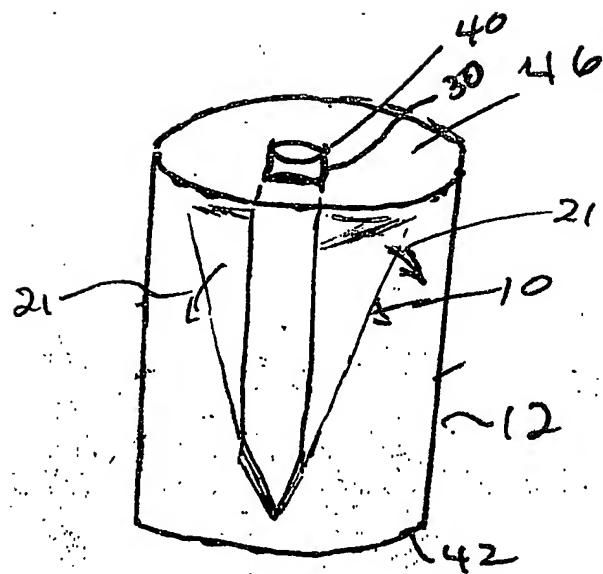


FIG. 2

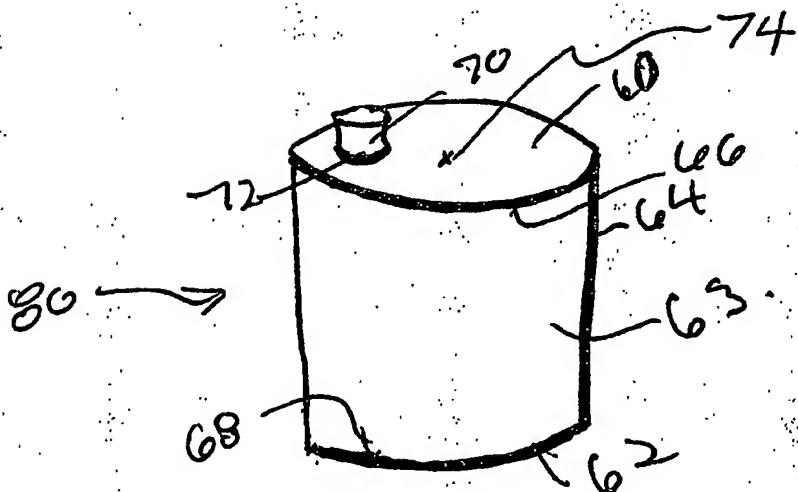
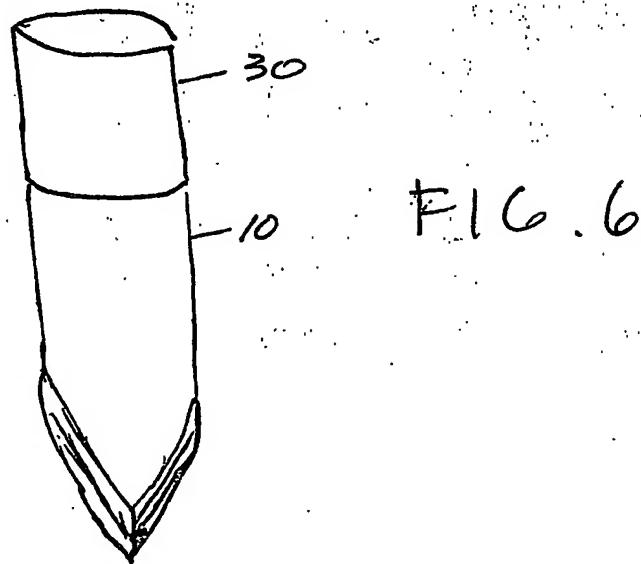
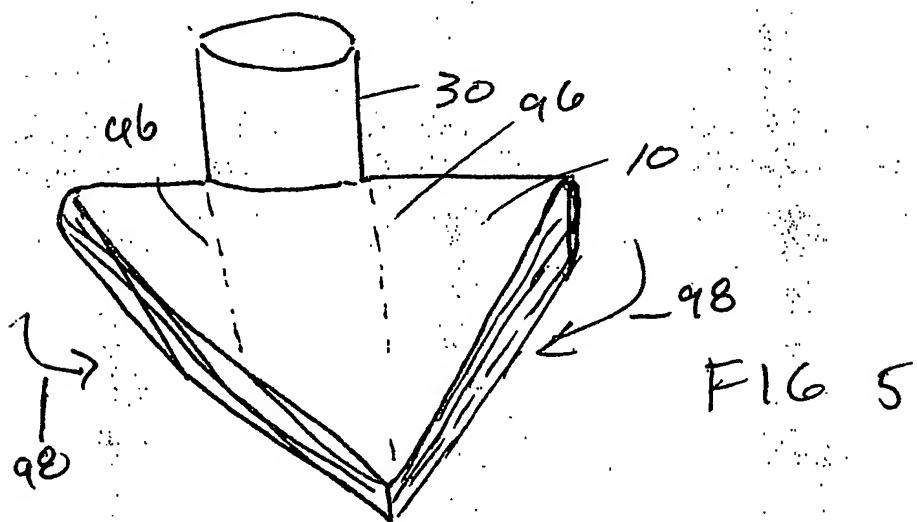
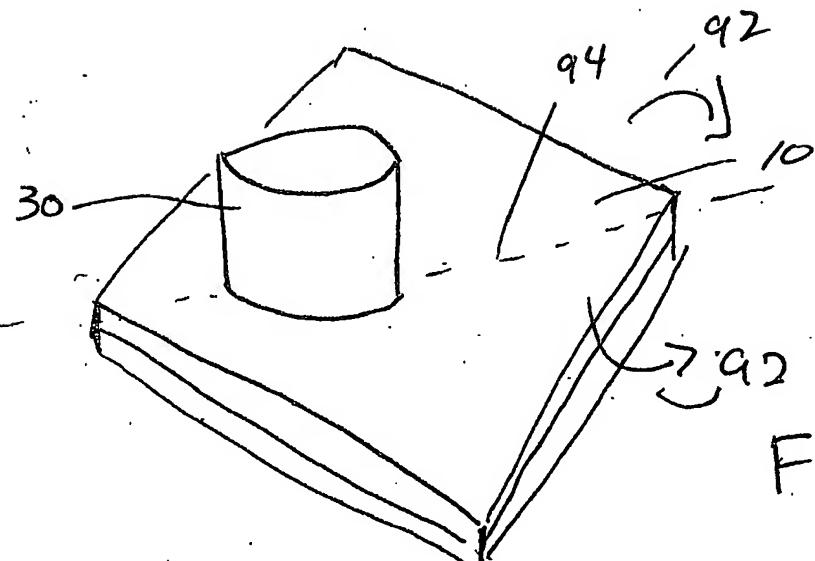
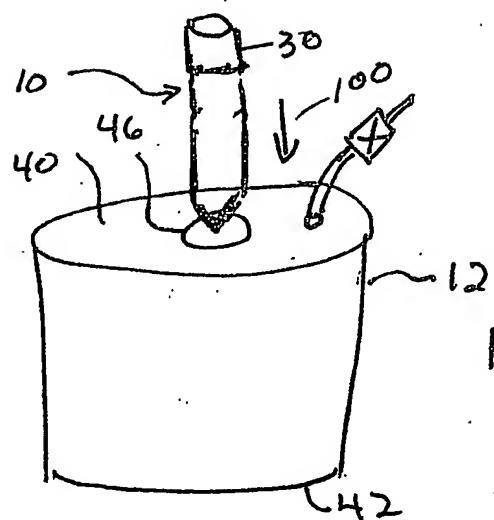
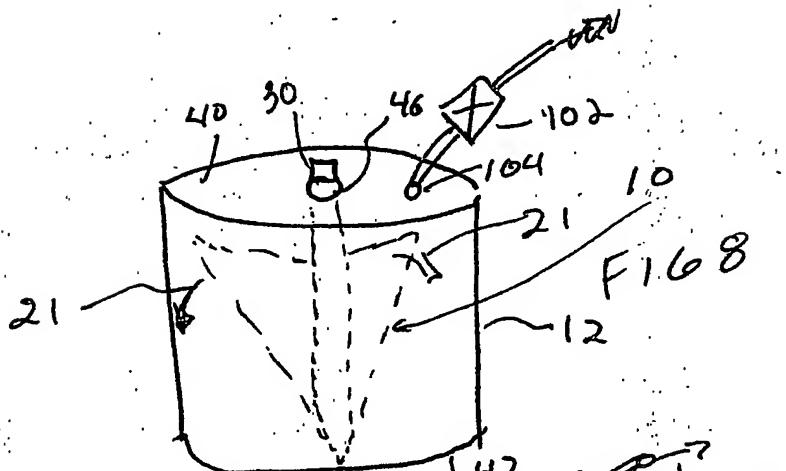


FIG. 3.

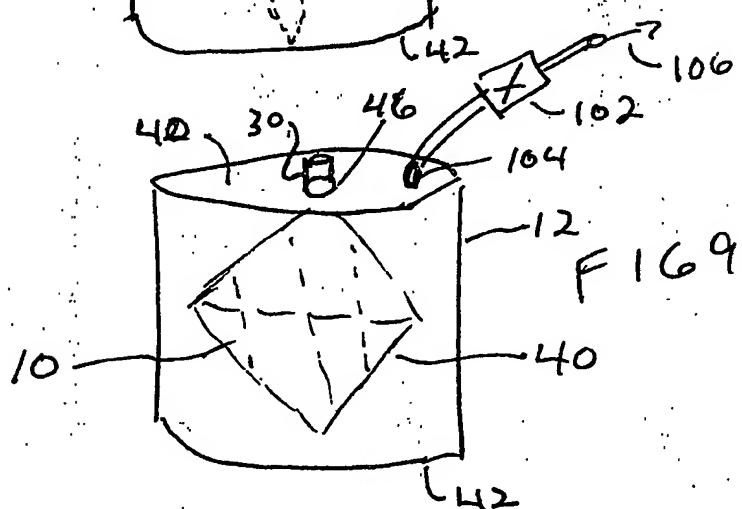




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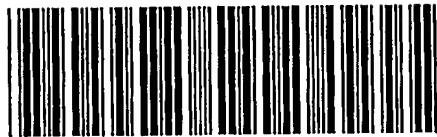


F16-8



F16-9.

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